

Q13
cont.

through step S56. The target pressure P^* is set when the servo ratio is constant. It is set to the value of the booster 12 in the normal condition, or after the booster 12 reaches the limitation point of the brake power assistance, it is set to the value which is determined by the normal condition brake control, hereafter abbreviated to the target pressure of the normal condition. When the servo function failure occurs, the master pressure becomes a little small, but since the fluid leakage does not occur, the brake fluid pressure can be controlled to the same value of the target fluid pressure P^* .

IN THE CLAIMS:

Please cancel claims 2, 13 and 15 without prejudice to or disclaimer of the subject matter contained therein.

Please replace claims 1, 3-12, 14 and 16-18 as follows:

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1. (Amended) A brake device having a fluid pressure source which generates a fluid pressure based on operation of a brake operating member, the brake device actuated by fluid pressure generated by the fluid pressure source, comprising:
 - a brake operating amount detector which detects an operating amount of the brake operating member,
 - a fluid source pressure detector which detects the pressure generated in the fluid pressure source, and
 - a failure detector which detects and distinguishes between different types of failures of the brake device based on the pressure detected by the fluid source pressure detector and the operating amount detected by the brake operating amount detector, wherein the failure detector detects and distinguishes the types of the failures between: (i) a case in which the pressure detected by the fluid source pressure detector at a time when the detected operating amount is a first predetermined amount of operation which is smaller than a second

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predetermined amount of operation is smaller than a first predetermined pressure which is larger than a second predetermined pressure, (ii) a case in which the pressure detected by the fluid source pressure detector at the time when the detected operating amount is the first predetermined amount of operation is larger than the first predetermined pressure, and (iii) a case in which the pressure detected by the fluid source pressure detector at a time when the operating amount detected by the brake operation amount detector is the second predetermined amount of operation is larger than the second predetermined pressure.

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3. (Amended) The brake device as in claim 1, wherein the fluid pressure source includes a master cylinder which generates the fluid pressure corresponding to an input power, and a booster which increases an operation power of the brake operating member and outputs an increased operation power to the master cylinder,

the fluid source pressure detector includes a master cylinder pressure detector which detects the pressure of the master cylinder or a connected portion of the master cylinder, and

the failure detector detects a failure of the booster if the pressure of the master cylinder at the time when the amount of the brake operation is the second predetermined amount of operation is larger than the second predetermined pressure, and detects the failure of fluid leakage of the brake device if the pressure of the master cylinder at the time when the amount of the brake operation is the second predetermined amount of operation is smaller than the second predetermined pressure.

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4. (Amended) The brake device as in claim 3, wherein the failure detector includes a bottoming detector which detects a bottoming condition in the master cylinder.

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5. (Amended) The brake device as in claim 4, wherein the brake operating amount detector includes an operation power detector which detects power supplied to the brake operating member, and

the bottoming detector detects the bottoming condition based on whether an increasing gradient of the power detected by the brake operating amount detector is larger than a predetermined gradient or not.

6. (Amended) The brake device as in claim 5, further comprising a brake fluid control device which controls a brake fluid pressure in different ways based on the type of the failure detected by the failure detector,

the fluid source pressure detector includes a master cylinder pressure detector which detects a master pressure of the master cylinder or a connected portion of the master cylinder,

the failure detector detects a small amount fluid leakage failure ^{if the master} pressure detected by the master cylinder pressure detector at the time when the brake operation detected by the brake operating amount detector is the first predetermined operation is larger than the first predetermined pressure, and a decreasing gradient of the master pressure detected by the master cylinder pressure detector is larger than a predetermined gradient,

the brake fluid control device includes a leak amount control device which increases a supplying amount of a brake fluid to a brake, if the failure detector detects the small amount fluid leakage failure, compared to the supplying amount of the brake fluid when a large amount fluid leakage failure is detected.

7. (Amended) The brake device as in claim 5, wherein:

the master cylinder has ^{NS} two pressure chambers and generates the fluid pressure corresponding to the input power,

the brake device includes a front side brake ^{FL} connected to one of the two pressure chambers and a rear side brake ^{RL not labeled} connected to the other of the two pressure chambers, and

P12 Contd
the fluid source pressure detector includes a front wheel side pressure detector which detects the fluid pressure of the pressure chamber which is connected to the front side brake or a portion connected to a corresponding pressure chamber of the master cylinder.

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8. (Amended) The brake device as in claim 1, further comprising a brake fluid control device which controls a brake fluid pressure in different ways based on the type of the failure detected by the failure detector,

the fluid pressure source includes a master cylinder which has a pressure chamber and generates the fluid pressure corresponding to an input power, a first compressing device which compresses an operating fluid of the pressure chamber of the master cylinder and supplies a compressed operating fluid to a brake, a second compressing device which compresses the operating fluid stored in an atmospheric condition in a reservoir tank, the reservoir tank is larger than the pressure chamber of the master cylinder, and

the brake fluid control device includes a brake condition selection device which selects either of a first condition in which the brake is compressed by the first compressing device, or a second condition in which the brake is compressed by the second compressing device based on the type of the failure detected by the failure detector.

9. (Amended) A brake device having a fluid pressure source which generates a fluid pressure based on operation of a brake operating member, the brake device actuated by the fluid pressure generated by the fluid pressure source, comprising:

a brake operating amount detector which detects an operating amount of the brake operating member,

a fluid source pressure detector which detects the fluid pressure generated in the fluid pressure source,

a failure detector which detects and distinguishes between different types of failures of the brake device based on the pressure detected by the fluid source pressure detector and the operating amount detected by the brake operating amount detector, and

a brake fluid control device which controls the brake fluid pressure in different ways based on the type of the failure detected by the failure detector, wherein the fluid pressure source includes a master cylinder which has a pressure chamber and generates the fluid pressure corresponding to an input power, a first compressing device which compresses an operating fluid of the pressure chamber of the master cylinder and supplies a compressed operating fluid to a brake, a second compressing device which compresses the operating fluid stored in an atmospheric condition in a reservoir tank, the reservoir tank is larger than the pressure chamber of the master cylinder, and

the brake fluid control device includes a brake condition selection device which selects either of a first condition in which the brake is compressed by the first compressing device, or a second condition in which the brake is compressed by the second compressing device based on the type of the failure detected by the failure detector.

10. (Amended) The brake device as in claim 9, wherein the failure detector includes a bottoming detector which detects a bottoming condition in the master cylinder.

11. (Amended) The brake device as in claim 10, wherein the brake operating amount detector includes an operation power detector which detects a power supplied to the brake operating member, and

the bottoming detector detects the bottoming condition based on whether an increasing gradient of the operation power detected by the brake operating amount detector is larger than a predetermined gradient or not.

12. (Amended) The brake device as in claim 10, wherein the fluid source pressure detector includes a master cylinder pressure detector which detects the pressure of a pressure chamber of the master cylinder or a connected portion of the master cylinder, the failure detector detects a small amount fluid leakage failure if the master pressure detected by the master cylinder pressure detector at the time when the brake operation detected by the brake operating amount detector is a first predetermined operation is larger than a first predetermined pressure, and a decreasing gradient of the master pressure detected by the master cylinder pressure detector is larger than a predetermined gradient, and the brake fluid control device includes a leakage amount control device which increases a supplying amount of a brake fluid to a brake if the failure detector detects a small amount fluid leakage failure, compared to the supplying amount of the brake fluid when a large amount fluid leakage failure is detected.

14. (Amended) The brake device as in claim 9, wherein:

the master cylinder has two pressure chambers and generates the fluid pressure corresponding to the input power,

the brake device includes a front side brake connected to one of the two pressure chambers and a rear side brake connected to the other of the two pressure chambers, and

the fluid source pressure detector includes a front wheel side pressure detector which detects the fluid pressure of the pressure chamber which is connected to the front side brake or a portion connected to a corresponding pressure chamber of the master cylinder.

16. (Amended) A brake device having a fluid pressure source which generates a fluid pressure based on operation of a brake operating member, the brake device actuated by the fluid pressure generated by the fluid pressure source, comprising:

a brake operating amount detector which detects an operating amount of the brake operating member,

a fluid source pressure detector which detects the pressure generated in the fluid pressure source,

a failure detector which detects and distinguishes between different types of failures of the brake device based on the pressure detected by the fluid source pressure detector and the operating amount detected by the brake operating amount detector,

the fluid pressure source device includes a master cylinder which generates the fluid pressure corresponding to an input power, and

the failure detector includes a bottoming detector which detects a bottoming condition in the master cylinder based on whether an increasing gradient of the brake operating amount detected by the brake operating amount detector is larger than a predetermined gradient.

17. (Amended) The brake device as in claim 16, wherein the brake operating amount detector includes an operation power detector which detects an operation power supplied to the brake operating member, and

the bottoming detector detects the bottoming condition based on whether an increasing gradient of the operation power detected by the brake operating amount detector is larger than a predetermined gradient or not.

18. (Amended) The brake device as in claim 16, wherein the master cylinder has two pressure chambers and generates the fluid pressure corresponding to the input power, and the brake device includes a front side brake connected to one of the two pressure chambers and a rear side brake connected to the other of the two pressure chambers, and

the fluid source pressure detector includes a front wheel side pressure detector which detects the fluid pressure of the pressure chamber which is connected to the front